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Robert J. Jackson Jr.

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STOCK UNLOADING AND BANKER INCENTIVES

Robert J. Jackson, Jr.*

Congress has directed federal regulators to oversee banker pay. For the first time, these regulators are now scrutinizing the incentives of risk-takers beyond the bank's top executives. Like most public company managers, these bankers are increasingly paid in stock rather than cash. The ostensible reason is that stock-based pay aligns manager and shareholder interests. But portfolio theory predicts that managers will diversify away, or "unload," stock-based pay unless they are restricted from doing so. One way to deter unloading may be to require managers to disclose it, as investors and colleagues will assume that managers are unloading because they are unmotivated or think their stock is overvalued.

Using rare data on stock unloading at Goldman Sachs, this Essay provides the first empirical study of incentives throughout a bank's managerial hierarchy. I find that bankers paid in stock soon sell a nearly equivalent amount, unless they have to disclose, in which case they sell much less. These findings suggest that regulators concerned about incentives need information on bankers' overall equity holdings, including the effects of unloading. They also suggest that pre-crisis disclosure rules encourage executives to maintain dangerously concentrated positions in their bank's stock.

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* Associate Professor of Law, Columbia Law School. I served as an advisor to senior officials at the Department of the Treasury in 2009 and 2010; the views expressed here are my own and should not be attributed to the Treasury. I am indebted to William C. Mulvey for insights that gave rise to this Essay. Lucian Bebchuk, Andrew S. Buzin, John C. Coffee, Jr., Steven M. Davidoff, Alan Dye, Merritt Fox, Jeff Gordon, Kevin Haeblerle, Scott Hemphill, Edward R. Morrison, Alex Raskolnikov, Broc Romanek, Mark A. Saunders, Christina J. Saunders, David Schizer, Robert E. Scott, Natalya Shnitser, Richard Squire, and participants in workshops at Columbia Law School and Harvard Law School provided insightful comments. Michelle Chen, Adrian Clevenot, and Chapman Wong provided exceptional research assistance, and Christina Ma added outstanding editorial insights. Any remaining errors are mine alone.

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INTRODUCTION

Part of Congress's reaction to the financial crisis was to direct federal regulators to oversee banker pay. In response, the regulators have looked for the first time at the incentives of risk-takers who are not among the bank's senior leaders but whose actions can still threaten systemic stability.¹ These bankers are increasingly paid in stock rather than cash, on the view that stock-based pay aligns manager and shareholder interests. But portfolio theory predicts that individuals prefer a diversified portfolio over concentrated exposure to one firm. Thus, bankers may diversify away, or "unload," their stock-based pay, for example by selling shares of stock. One way to deter unloading may be to require that it be disclosed, as colleagues and investors to whom unloading is revealed may conclude that the banker is unmotivated or thinks that the stock is overpriced. But no previous work has studied whether disclosure does, in fact, deter unloading. And little is known about unloading by the traders and other bankers who have recently become the focus of regulators' attention, because these managers, unlike "executives," are not covered by the standard disclosure rules included in the Securities Exchange Act of 1934.²

In this Essay, I provide the first empirical study of unloading throughout a bank's managerial hierarchy. The study analyzes stock compensation and unloading among hundreds of Goldman Sachs's senior managers, including both "executives" and other bankers whose activities may be systemically important. The evidence reveals two significant findings. First, Goldman managers do, in fact, diversify away most of the in-

1. See, e.g., Executive Compensation Oversight After the Dodd-Frank Wall Street Reform and Consumer Protection Act: Hearing Before the H. Comm. on Fin. Servs., 111th Cong. 39 (2010) (statement of Scott G. Alvarez, General Counsel, Board of Governors of the Federal Reserve System) [hereinafter Alvarez Testimony] ("[C]ompensation arrangements for executive *and* non-executive employees alike may pose safety and soundness risks if not properly structured" (emphasis in original)).

2. Pub. L. No. 73-291, 48 Stat. 881 (codified as amended at 15 U.S.C. §§ 78a-78lll (2006)).

centive effects of their stock-based pay. Second, bankers who are required to disclose unload much less. The same managers unload less when they have to disclose than when they do not, and they unload more when they are not required to disclose but know they soon will be.

It would be imprudent to change regulatory policy based on findings at a single firm. Study of unloading at Goldman Sachs's competitors—and at non-bank public companies as well—is needed. To the extent, however, that unloading at Goldman is indicative of unloading generally—and there is good reason to believe that it is—these findings have important implications for policymakers and investors.

For one thing, regulators who are concerned with incentives need information on bankers' overall equity holdings, which incorporate the effects of unloading, rather than the aggregate amount of stock the bankers are paid. Second, regulators should acknowledge that the current disclosure regime may encourage excessive risk-taking by inducing bank executives to maintain large, undiversified positions in the bank's stock that allow executives, like other bank shareholders, to internalize the profits from risk-taking while sharing losses with depositors and taxpayers.

More generally, shareholders and lawmakers who want to make stock-based pay a better device for aligning manager and owner incentives should consider whether non-executives should also have to disclose unloading. And because section 16 of the Exchange Act already requires executives to disclose unloading, securities regulators should reassess its scope to ensure that its reach encompasses only those managers for whom stock ownership provides effective incentives.

The remainder of the Essay proceeds as follows. Part I describes stock compensation at public companies and the disclosure rules that govern its use. Part II presents evidence on stock unloading at Goldman Sachs. Part III discusses implications for bank regulators, shareholders, and lawmakers concerned about the incentive effects of stock-based pay. Part IV concludes.

I. STOCK COMPENSATION, UNLOADING, AND DISCLOSURE

In large, public corporations the interests of managers and owners frequently diverge.³ Increasingly public companies attempt to address this divergence by paying managers in stock rather than cash.⁴ But man-

3. For the seminal articulation of the agency problem that arises from the separation of ownership and control over corporate decisionmaking, see Adolf A. Berle & Gardiner C. Means, *The Modern Corporation and Private Property* (11th ed. 2010); Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 *J. Fin. Econ.* 305, 312–30 (1976).

4. For example, according to one study, the median large public company granted 1% of its outstanding shares to its employees in the form of stock compensation for the year 2008 alone. Pearl Meyer & Partners, *2008 Equity Stake Study 3* (2008), available at <http://www.pearlmeyer.com/Pearl/media/PearlMeyer/PDF/2008PMPEquityStakeStudy.pdf> (on file with the *Columbia Law Review*).

agers are risk-averse, and their salaries, along with their professional reputations, are already exposed to the fortunes of the firm.⁵ Thus, portfolio theory predicts that they will respond to receiving pay in stock by diversifying away the risk associated with the stock (or “unloading”), for example by selling the shares, undermining the incentive effects that would otherwise be achieved by stock compensation.⁶

Most managers are free to unload without disclosing these transactions. But section 16 requires all public companies to identify the managers who exercise policymaking authority at the firm as “executives” and disclose their unloading.⁷ Previous work on section 16 has focused almost exclusively on its merits as a means of regulating insider trading.⁸ In this Essay, I examine a related, but unappreciated, consequence of section 16’s disclosure rules. Because observers cannot distinguish between unloading motivated by managers’ preference for diversification and unloading motivated by inside information, disclosure of managers’ unloading sends costly signals to markets, colleagues, and the public. Thus, section 16’s disclosure rules may deter managerial diversification.

The majority of stock compensation at U.S. public companies is paid to non-executives like the traders and other bankers who do not serve as leaders of their firms.⁹ But, because their unloading is not disclosed, no previous work has evaluated whether non-executives unload in response to receiving stock-based pay. And, because most publicly available data on unloading are limited to executives, no previous study has compared how the same managers unload when they are subject to section 16 and when they are not.

5. Following the broader literature on the incentives of senior managers, I assume for purposes of this Essay that managers are risk-averse. See, e.g., John E. Core, Wayne R. Guay & David F. Larcker, *Executive Equity Compensation and Incentives: A Survey*, FRBNY Econ. Pol’y Rev., Apr. 2003, at 27, 33 (summarizing this literature). Importantly, however, this assumption is disputed, see, for example, Victor P. Goldberg, *Aversion to Risk Aversion in the New Institutional Economics*, 146 J. Inst. & Theoretical Econ. 216, 216 (1990), and future research on managerial incentives would benefit from closer consideration of the organizational and institutional circumstances under which managers may prefer exposure to the stock of their firms. See *infra* Part IV.

6. See, e.g., Harry M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* 274–97 (1959).

7. See *infra* text accompanying notes 19–22. Although the language of section 16 itself refers to these employees as “officers,” the relevant regulations borrow the definition of this term from the definition of “executive officer” elsewhere in the Exchange Act, see *infra* note 20, and practitioners generally refer to these managers as “executives.” For ease of exposition, throughout this Essay I refer to those subject to section 16 as “executives,” and to all other managers as “non-executives.”

8. See, e.g., Robert Charles Clark, *Corporate Law* § 8.6, at 295 (1986) (summarizing this literature).

9. See John E. Core & Wayne R. Guay, *Stock Option Plans for Non-Executive Employees*, 61 J. Fin. Econ. 253, 254 (2001) [hereinafter Core & Guay, *Stock Option Plans*] (finding, in sample of 756 large public companies, that 67% of stock options issued by firms were held by non-executives).

A. Stock Compensation and Unloading

Stock compensation is paid in two principal forms: stock awards and stock options. Stock awards are actual shares of the firm's stock, which rise and fall in tandem with the stock price. Stock options, by contrast, give the manager the right to purchase a share of stock at a specified exercise price. Both forms are now standard components of managers' pay at U.S. public companies in general and at large financial institutions in particular.¹⁰

Both stock awards and stock options expose the manager to unsystematic risk related to her employer's stock price, so portfolio theory predicts that receiving either will induce the manager to diversify by unloading. A manager can unload a stock award by selling an equivalent number of shares of the company's stock. If she has received stock options, the manager can unload by exercising the options and selling the shares she acquires. The extent to which stock compensation succeeds in aligning incentives depends on whether a manager's overall equity holdings increase after taking into account the effects of unloading.¹¹

Because most public companies assert that the purpose of stock compensation is to align manager and shareholder interests, one might expect firms to adopt limitations on unloading by contract. In practice, such restrictions are rare.¹² Since portfolio theory indicates that managers' unloading will undermine the incentive benefits of stock compensation, and firms do not generally contract around that result, an extensive literature argues that stock-based pay serves other purposes, such as preservation of liquidity, reducing costs of capital associated with adverse selection, and obtaining important tax benefits.¹³ Nevertheless, most public

10. See Pearl Meyer & Partners, *supra* note 4, at 7 (finding that, among sample of 200 large U.S. public companies, median firm has reserved 6.0% of its shares for all previously issued awards of stock-based pay); *id.* (finding that median securities firm has reserved 21.5% of its shares for this purpose).

11. For ease of exposition, throughout this Essay I refer to managers' holdings in the stock of their firms after accounting for the effects of unloading as the manager's "equity holdings."

12. See, e.g., David M. Schizer, *Executives and Hedging: The Fragile Legal Foundation of Incentive Compatibility*, 100 *Colum. L. Rev.* 440, 461 (2000) (noting that, although some firms require senior managers to own minimum amount of firm's stock, "the press has reported that such ownership guidelines often are not enforced"); see also Lucian A. Bebchuk & Jesse M. Fried, *Paying for Long-Term Performance*, 158 *U. Pa. L. Rev.* 1915, 1934 (2010) [hereinafter *Bebchuk & Fried, Long-Term Performance*] (noting that "target" amounts of stock ownership under these guidelines "have tended to be low," and "in many cases, the targets were purely voluntary").

13. See, respectively, Core & Guay, *Stock Option Plans*, *supra* note 9, at 275–76, 278–79 & tbls.6–7 (finding "strong evidence that stock option grants are more heavily used by companies with cash constraints"); Eugene F. Fama & Kenneth R. French, *Financing Decisions: Who Issues Stock?*, 76 *J. Fin. Econ.* 549, 550–51, 554 (2005) (arguing that issuances of stock-based pay to employees are among "prime candidates" for addressing adverse selection effects in capital markets), and Ilona Babenko & Yuri Tserlukevich, *Analyzing Tax Benefits from Employee Stock Options*, 64 *J. Fin.* 1797, 1799 (2009).

companies assert that stock-based pay is intended to link manager and shareholder wealth,¹⁴ and in this Essay I focus on whether stock-based pay serves this purpose. Answering that question requires close study of unloading.

From the manager's perspective, the benefits of diversification depend on the magnitude of her existing holdings of stock as a proportion of her overall wealth. Thus, all things equal, we would expect managers with larger existing holdings of stock to unload more in response to stock-based pay than managers with little existing exposure.

Previous empirical study in this area has generally been limited to the executives who are required to disclose unloading.¹⁵ This work confirms that executives unload in response to stock compensation,¹⁶ and

(finding that, in sample of public companies, paying equivalent salary in lieu of stock options would increase average firm's federal income tax liability by \$12.6 million). In addition to these firm-level benefits, agreements associated with stock-based pay usually require managers to remain employed in order to fully "vest" in, or earn, an award of stock compensation, serving an important retention function, see, for example, Christopher D. Ittner et al., *The Structure and Performance Consequences of Equity Grants to Employees of New Economy Firms*, 34 J. Acct. & Econ. 89, 90 (2003), and options give employees the ability to defer individual income taxation, see Schizer, *supra* note 12, at 469 ("By not exercising [a stock option], the executive can defer the tax on her profit from the option, thereby reducing the tax's real impact.").

14. See, e.g., Assurant, Inc., Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A), at B-1 (Apr. 10, 2008) ("The purpose of this [plan] is to . . . provid[e] incentives directly linked to stockholder value."); Morgan Stanley, Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A), at 58 (Apr. 14, 2011) (indicating that company's stock compensation plan "provides employees with long-term incentives that are aligned with shareholder interests").

15. See, e.g., Lucian A. Bebchuk, Alma Cohen & Holger Spamann, *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008*, 27 Yale J. on Reg. 257, 260 (2010) (finding executives at two large financial institutions "regularly took large amounts of money off the table by unloading shares and options"); Sanjai Bhagat & Brian Bolton, *Bank Executive Compensation and Capital Requirements Reform* 15 (Mar. 8, 2011) (unpublished manuscript) (on file with the *Columbia Law Review*) (finding same for larger group of financial institutions). While other work has evaluated disclosures that public companies must provide on firm-wide stock-option plans, see 17 C.F.R. § 229.201(d) (2011), those disclosures do not provide individualized detail on unloading activity and hence are of limited use in evaluating individual employees' incentives. See, e.g., Core & Guay, *Stock Option Plans*, *supra* note 9, at 262–63 (noting that these disclosures "do not [provide] information on individual grants" of stock-based pay and describing limits of analysis based on those disclosures given that unloading "decisions are made at the individual . . . level"); see also Steven Huddart & Mark Lang, *Information Distribution Within Firms: Evidence from Stock Option Exercises*, 34 J. Acct. & Econ. 3, 3–4 (2003) (analyzing correlation between "firm-wide stock option exercise in a month" and "excess stock returns in the subsequent 6 months").

16. See Eli Ofek & David Vermack, *Taking Stock: Equity-Based Compensation and the Evolution of Managerial Ownership*, 55 J. Fin. 1367, 1368 (2000) (finding that unloading "effectively neutralize[s] much of the incentive impact of high-ownership managers' stock-based pay"); cf. J. Carr Bettis, John M. Bizjak & Michael L. Lemmon, *Managerial Ownership, Incentive Contracting, and the Use of Zero-Cost Collars and Equity Swaps by Corporate Insiders*, 36 J. Fin. & Quantitative Analysis 345, 346 (2001) (finding that

that the magnitude of this effect depends on the executive's overall stock holdings.¹⁷

B. *Unloading and Disclosure*

Most managers of large public companies are not required to disclose unloading. But section 16 requires public companies to identify their executives and to publicly and immediately disclose their unloading.¹⁸ Managers' tendency to unload may be muted if they are required to disclose it, because disclosure of unloading imposes costs on managers, sending signals to both markets and colleagues that the executive has negative inside information. By making diversification more costly for executives, rules requiring disclosure of unloading may lead them to maintain concentrated exposure to their employer's stock. Thus, section 16's disclosure rules may have previously unappreciated implications for managers' incentives.

1. *Disclosure Rules.* — Section 16(a) of the Securities Exchange Act of 1934, a provision thought to regulate insider trading,¹⁹ requires all public companies to identify managers who perform "policy-making" functions as "executives".²⁰ The firms themselves are generally free to make the determination as to which managers will be deemed executives.²¹ Upon

executives "use [hedging transactions] to cover a significant proportion of their holdings of the firm's stock").

17. See Ofek & Yermack, *supra* note 16, at 1368 (concluding that executives with higher levels of existing stock ownership are more likely to unload in response to stock-based pay).

18. See *supra* text accompanying note 7. Section 16 also requires disgorgement from executives of any profit earned from "short-swing" purchases and sales of the firm's stock within a six-month period, 15 U.S.C. § 78p(b) (2006), and separately prohibits executives from selling their employer's stock "short," *id.* § 78p(c). Those provisions, and particularly section 16(b)'s prohibition on short-swing profits, have been the focus of prior work on the influence of section 16 on managerial incentives. See Merritt B. Fox, *Insider Trading Deterrence Versus Managerial Incentives: A Unified Theory of Section 16(b)*, 92 Mich. L. Rev. 2088, 2090 (1994). In this Essay, however, I focus on the implications of section 16's disclosure rules for incentives; section 16(b) is unlikely to influence the relationship between stock-based pay and executives' unloading. See *infra* note 55.

19. See, e.g., *Kern Cnty. Land Co. v. Occidental Petroleum Corp.*, 411 U.S. 582, 591 (1973) (noting that preamble of section 16(b) specifies that it was enacted "[f]or the purpose of preventing the unfair use of information which may have been obtained by" insiders (quoting 15 U.S.C. § 78p(b))).

20. See Reports of Directors, Officers, and Principal Shareholders, 17 C.F.R. §§ 240.16a-1(f), 240.16a-2 (2011) (specifying that section 16 applies to each firm's "president, principal financial officer, principal accounting officer . . . , any vice-president . . . in charge of a principal business unit, division or function . . . , [or] any other officer who performs a policy-making function").

21. Cf. Peter J. Romeo & Alan J. Dye, *Section 16 Treatise and Reporting Guide* § 2.01[e], at 72 (Michael Gettelman ed., 3d ed. 2011) (describing case- and context-specific nature of this determination). Practitioners with significant experience in section 16 matters could not recall a case after 1980 in which the SEC has formally challenged a firm's section 16 determinations. E-mail from Alan L. Dye, Partner, Hogan Lovells LLP, to Robert J. Jackson, Jr. (Dec. 13, 2010, 10:00 PM EST) (on file with the

being identified as an executive, the manager must disclose her overall holdings of stock. Thereafter, she must disclose any transaction in the stock (including any unloading), and her resulting ownership, in the SEC's public database and on the company's website within two days.²² Thus, executives' unloading is immediately revealed; for other managers, unloading is generally never disclosed.

2. *Private Costs of Disclosure.* — The merits of section 16's disclosure requirements as a means of regulating insider trading have been the subject of considerable debate.²³ I focus on another consequence of these rules: that they deter executives from unloading. For three reasons, these rules make diversification far more costly for executives than for managers who are not subject to section 16.

a. *Market Signals.* — Unloading reduces managers' exposure to losses if the firm decreases in value, so observers cannot distinguish unloading motivated by diversification from unloading motivated by negative inside information. Thus, while rules requiring disclosure of insiders' trades may convey valuable information to market participants, the rules simultaneously deter unloading.²⁴ Regardless whether a manager's unloading is motivated by the need to diversify or by inside information, disclosure of the transaction may signal to markets that the manager has negative information about the firm's future prospects.²⁵

Columbia Law Review). Even older cases in which the SEC pursued such a challenge are rare. See, e.g., *Colby v. Klune*, 178 F.2d 872, 875 (2d Cir. 1949) (describing one of few reported challenges); John G. Gillis, *Securities Law and Regulation: Inside Information Developments*, 36 *Fin. Analysts J.* 10, 78 (1980) (citing *SEC v. Dwork*, Litigation Release No. 8849, SEC Docket 181 (D.D.C. 1979)).

22. SEC Mandated Electronic Filing and Web Site Posting for Forms 3, 4 and 5, 68 *Fed. Reg.* 25,788 (May 13, 2003) (codified in scattered parts of 17 C.F.R.).

23. Compare, e.g., Henry G. Manne, *Insider Trading and the Stock Market* 90–91, 104–05 (1966) (arguing that regulation of insider trading is unjustified in absence of empirical evidence such trading is harmful to corporation or its shareholders), with James D. Cox, *Insider Trading and Contracting: A Critical Response to the "Chicago School,"* 1986 *Duke L.J.* 628, 642–55 (contending insider trading encourages price manipulation and discourages disclosure of material nonpublic information; regulation of insider trading is therefore justified).

24. It is difficult for managers credibly to signal that a transaction is motivated by diversification rather than by negative inside information. Recognizing this problem, the SEC recently promulgated Rule 10b5-1, which creates a safe harbor from insider-trading liability for insiders who precommit to trades in their company's stock. 17 C.F.R. § 240.10b5-1 (2011). These rules were intended to facilitate managerial diversification by insulating these trades from insider-trading liability. But there is evidence that insiders have used the rule to increase profits from informed trading, M. Todd Henderson, *The Uses and Abuses of Rule 10b5-1*, at 33–35 (2010) (unpublished manuscript) (on file with the *Columbia Law Review*), underscoring the difficulty, for both regulators and market participants, of distinguishing unloading motivated by diversification from unloading motivated by inside information.

25. See Fox, *supra* note 18, at 2094 (arguing that broad application of section 16 will lead to inclusion of both transactions that are based on inside information and transactions that are not based on inside information, causing managers to be less willing

Sending such a signal carries significant costs for executives. The signal may compromise the firm's competitiveness in product and labor markets, if customers, suppliers, or prospective employees infer that executives have negative information about the firm. These developments are costly for executives, whose economic and reputational capital remain tied to the firm. Moreover, disclosure of unloading may encourage a hostile takeover, threatening executives' private benefits of control. Thus, for executives, the diversification-related benefits of unloading are mitigated by the costs of the signals unloading sends to outsiders.

b. *Internal Signals.* — The signal arising from disclosure of an executive's unloading also imposes costs on the executive inside the firm. Colleagues, like outsiders, may infer that the executive has negative inside information, and hence the executive's unloading may lead to unloading by other employees. For the same reason, colleagues may be more likely to seek other employment, or may conclude that the executive herself is doing so.

Even if unloading does not give rise to negative signals about an executive's inside information, unloading conveys to colleagues that the executive has less of a financial interest in the firm's long-term value—and, thus, is less likely to manage the firm to maximize that value. Particularly in companies with longstanding cultural commitments to managerial ownership, this information can carry important implications for the firm's future, for example with respect to whether decisions regarding the allocation of the firm's resources will reflect executives' private interests rather than the interests of shareholders. Thus, an executive who wishes to unload must consider the costs associated with the signal that disclosure of her unloading will send to her colleagues.²⁶

c. *Reputational Costs.* — Finally, disclosure of an executive's decision to diversify may have negative implications for her professional reputation. Although portfolio theory predicts that executives will prefer to diversify away risk related to the stock of their firms, the press has increasingly criticized unloading transactions as contrary to shareholder interests. Indeed, several executives have been publicly scolded for unloading that was permitted by the firm and contemplated by contract.²⁷

to accept pay in form of stock and resulting in a "weakening of . . . incentives [that] is a social cost of including" these transactions within reach of section 16).

26. For this reason, the history and organizational structure of a firm are important factors in determining the extent to which disclosure may deter a particular manager from unloading. See *infra* note 31 and accompanying text (describing cultural significance of managerial stock ownership for partners of Goldman Sachs). These considerations will also bear on the appropriate regulatory and investor responses to stock unloading, see *infra* Part III.B, and offer important opportunities for future theoretical and empirical work on the effects of disclosure on managerial incentives. See *infra* Part IV (describing intra-organizational implications of stock unloading, including potential effects relating to signaling and internal governance of the firm).

27. For example, the exercise of stock options by a group of Goldman Sachs executives recently received significant media attention. Although the expiring term of the

Executives may worry that disclosure of their unloading transactions will subject them to criticism of this kind. Such criticism would be less frequent, of course, if unloading were not disclosed.

For all of these reasons, section 16 may deter executives from diversifying. While this effect has been unappreciated in a literature largely focused on insider trading,²⁸ it might not surprise the provision's Depression-era drafters. They were profoundly influenced by the scholarship of Adolf A. Berle and Gardiner C. Means, who had just published *The Modern Corporation and Private Property*. Berle and Means famously described the separation of ownership and control in the industrial firms of their time, noting that the leaders of these firms owned almost no stock in their companies.²⁹ For those, like Berle and Means, who thought this undesirable, requiring these managers to disclose unloading could encourage a closer link between ownership and control in public companies. The authors' extensive intellectual and political influence at the time section 16 was adopted has led some to argue that the provision was indeed intended to link managers' interests with those of owners.³⁰

Whether or not its drafters intended to deter executives from diversifying, no previous work has examined whether section 16 actually achieves that result. Because section 16's disclosure rules apply only to executives, it has not previously been possible to compare how the same managers unload when they are required to disclose and when they are not. In the next Part, I provide the first evidence suggesting that section 16's disclosure rules do in fact deter unloading—and, thus, have an unappreciated influence on managerial incentives at public companies.

II. UNLOADING AND DISCLOSURE AT GOLDMAN SACHS

Unloading can tell us a great deal about incentives at banks in particular and at large public companies more generally. Do non-executives respond to stock compensation by unloading, diversifying away the incentive effects of stock-based pay? Do section 16's disclosure rules deter di-

options required the executives either to exercise or forego gains already earned, several reports referred to these proceeds as a "windfall." E.g., James Quinn, Blankfein Cashes in \$6M Profit: Goldman Chief Cashed in on Options Received 10 Years Ago, *Daily Telegraph* (London), Aug. 17, 2010, at 1.

28. For a rare exception, see Steve Thel, *The Genius of Section 16: Regulating the Management of Publicly Held Companies*, 42 *Hastings L.J.* 391, 419–20 (1991) (contending that "[e]mbarrassment" related to section 16 disclosures may prevent officers from trading on inside information).

29. Berle & Means, *supra* note 3, at 46 n.34, 53 (stating that while "the ultimate control of nearly half of industry [is] actually in the hands of a few hundred men," "the larger the . . . company, the smaller . . . the proportion of stock held by the management").

30. See Thel, *supra* note 28, at 464 (noting that Berle was member of committee convened in 1933 to study stock exchange legislation and enjoyed considerable influence over President's views (citing Steve Thel, *The Original Conception of Section 10(b) of the Securities Exchange Act*, 42 *Stan. L. Rev.* 385, 418 (1990))).

versification? This Part presents evidence offering the first empirical glimpse of the answers to those questions.

The firm I study here, Goldman Sachs, is the world's most profitable investment bank. A former partnership, the firm still refers to its most senior managers as "partners." All of the partners are party to an agreement that limits their freedom to unload. Because of this agreement, the partners are required to file periodic schedules revealing details about the stock compensation paid to, and unloading by, all of the partners, including both executives and non-executives. These requirements are separate from section 16, which applies only to Goldman's executives.

The schedules provide the first evidence on unloading by non-executives at a large financial firm. Thus, they allow us to analyze whether these managers unload their stock-based pay. They also permit us to examine the influence of section 16's disclosure rules on unloading. Because the data are limited to a single company, it is far from clear that these findings apply to all public firms. The evidence does, however, offer two insights for regulators and investors concerned with the incentive effects of stock-based pay.

First, the evidence shows that each share of stock compensation the partners receive is associated with more unloading. Second, the data show that disclosure is associated with less diversification. The same individual executives unload less in years when they are subject to section 16 than in years when they are not. And the partners appear to anticipate the application of section 16, unloading more in the years immediately before the years when they are in the section 16 spotlight. The evidence suggests that disclosure rules have an important effect on managerial incentives at large public companies.

A. Incentives and Organizational Structure

Until 1999, Goldman Sachs was Wall Street's last major partnership. In that year, Goldman's partners agreed to take the firm public in an initial public offering (IPO). The partners worried, however, that the IPO might compromise the firm's long-held culture of managerial ownership.³¹ Thus, prior to the offering, the partners entered into an unusual agreement governing their incentives. This agreement, which limits each partner's freedom to unload, remains in place today.

The agreement specifies that a substantial portion of each partner's pay will consist of stock.³² The partners agreed to limit their sales of the

31. See, e.g., Charles D. Ellis, *The Partnership: The Making of Goldman Sachs* 394–97 (2008) (describing some partners' view that partnership structure had been "the vital engine of the firm's continuing success," and their concern that IPO would compromise partnership's unique culture and managerial incentives).

32. See Plan of Incorporation of the Goldman Sachs Group, L.P., *in* Goldman Sachs Grp., Amendment No. 2 to Form S-1, Ex. 2.1, sec. 4 (Apr. 30, 1999) [hereinafter *Plan of Incorporation*] (noting that "existing [partners] . . . are expected to participate" in programs providing for ongoing stock compensation).

Goldman shares that they held at the time of the IPO for three years.³³ Following the expiration of these IPO “lockup” restrictions, each partner agreed to hold at least 25% of the number of Goldman shares granted to them as stock compensation for as long as they remained employed by the firm.³⁴ Since 2004, when the IPO lockup restrictions lapsed, the partners have kept in place the unloading restriction on 25% of the number of shares that each partner receives in stock-based pay.³⁵

Goldman’s daily operations are overseen by the group of approximately thirty partners who comprise the firm’s management committee.³⁶ All of Goldman’s section 16 executives sit on this committee, along with other senior partners who represent the firm’s major business lines and regional operations. Every two years, the partners elect a class of new

33. See Goldman Sachs Grp., Shareholders’ Agreement, in Goldman Sachs Grp., Amendment No. 2 to Form S-1, Ex. 10.26, art. II, § 2.1 (Apr. 30, 1999) [hereinafter Original Shareholders’ Agreement] (incorporating by reference requirements of section 7 of Plan of Incorporation, *supra* note 32).

34. See *id.* § 2.2. Goldman’s partners typically receive stock-based pay in the form of stock awards or stock options (or their contractual equivalents, known as “restricted stock units” and “stock appreciation awards,” respectively). The partners become entitled to these awards, or “vest” in the shares or options, on the condition that they remain employed by the firm for a specified period of time. Goldman’s contractual restrictions on unloading generally apply to the number of shares or options that the partner receives after necessary withholdings for income tax. *Id.*

35. The firm recently imposed further limits on unloading for the members of its management committee. Goldman Sachs Grp., Goldman Sachs Compensation Practices 11 (2011) [hereinafter Goldman Sachs Grp., Compensation Practices], available at <http://www2.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/compensation-practices.pdf> (on file with the *Columbia Law Review*). These changes, which were implemented in late 2009, are generally not reflected in the period studied here. Moreover, since 2004, certain executives have been subject to additional contractual restrictions on unloading requiring them to retain 75% of the shares they receive in stock-based pay. See Amended and Restated Shareholders’ Agreement, in Goldman Sachs Grp., Amendment No. 54, (Schedule 13D/A), art. II, § 2.1(b) (June 23, 2004). Finally, in 2008, in connection with an investment in the firm during the financial crisis, Goldman agreed to additional restrictions on certain executives’ freedom to unload. The Goldman Sachs Grp., Inc., Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A), at 41 (Apr. 4, 2009). Because they apply only to selected executives, it is possible separately to control for the presence of these restrictions; estimates of the relationship between stock-based pay and unloading presented in this Part separately control for these restrictions. See *infra* text accompanying note 128.

36. See generally Goldman Sachs Grp., Compensation Practices, *supra* note 35, at 7 (describing composition of firm’s management committee); Goldman Sachs Grp., Report of the Business Standards Committee 51 (2011), available at <http://www2.goldmansachs.com/who-we-are/business-standards/committee-report/business-standards-committee-report-pdf.pdf> (on file with the *Columbia Law Review*) (providing organizational chart describing firm’s managerial hierarchy). Members of the management committee receive a greater proportion of their pay in stock than other partners. See Goldman Sachs Grp., Compensation Practices, *supra* note 35, at 13.

partners, and each new partner becomes party to the standard agreement limiting her freedom to unload stock-based pay.³⁷

B. Methodology

The partners' agreement permits the first study of unloading by non-executives. Because of the agreement, the partners as a group must file a securities schedule that is usually filed only by activist investors who hold large stakes in public companies.³⁸ Since these schedules do not usually provide information about unloading—such detail being the domain of section 16—the forms have not attracted attention from market participants.³⁹ The schedules provide rich detail on unloading by all of Goldman's partners—including both executives and non-executives.

Using these schedules, I constructed a hand-drawn dataset including detail on each unloading transaction, consolidating them by individual partner and year.⁴⁰ The schedules also include information on the stock-based pay received by the partners as a group. I supplemented these data with information about each partner, including year of election, membership on the management committee, and whether the partner is, in any

37. See Amended and Restated Shareholders' Agreement, in Goldman Sachs Grp. Annual Report (Form 10-K), Ex. 10.6, art. I, § 1.1(g) (Feb. 26, 2010) (noting agreement applies to all partners and those "who may become" partners of the firm).

38. The agreement gives rise to a disclosure obligation under section 13(d) of the Securities Exchange Act of 1934, 15 U.S.C. § 78m(d) (2006). The partners filed their first schedule at the time of the IPO and amended the schedule seventy-five times during the period examined here, each time providing additional detail on the partners' stock compensation and unloading activity. For further detail on these schedules and the assembly of the dataset, see *infra* Appendix, text accompanying notes 107–123.

39. A search of reports by equity analysts who analyze Goldman's stock revealed no mention of these schedules. See Thomson Research, Thomson ONE Banker Research Reports (last accessed Jan. 16, 2012) (reporting no results from search of analyst reports on Goldman Sachs between 2008 and 2011 for "13D," "stock sales," or "option exercises"). Moreover, public sources describing managers' ownership at Goldman do not include these filings. For example, the Yahoo! Finance page that provides analysis of Goldman's stock and managers' holdings relies exclusively on section 16 filings. The Goldman Sachs Group, Inc.: Insider Transactions, Yahoo! Finance, <http://finance.yahoo.com/q/it?s=gs> (on file with the *Columbia Law Review*) (last visited Jan. 27, 2012). Although these unusual filings recently became the subject of some media attention, for example, Susanne Craig & Eric Dash, Study Points to Windfall for Goldman Partners, N.Y. Times Dealbook (Jan. 18, 2011, 9:40 PM), <http://dealbook.nytimes.com/2011/01/18/study-points-to-windfall-for-goldman-partners/> (on file with the *Columbia Law Review*), those reports emerged two years after the period studied here.

40. I am especially grateful to Michelle Chen and Adrian Clemenot for their assistance in constructing this dataset.

particular year, subject to section 16. Table I below summarizes the data for the entire partnership during the period I study:

TABLE I. SUMMARY STATISTICS

	2000–2004	2005–2009
Total Number of Partners in Sample	753	
Total Number of Unloading Transactions	20,205	4,962
Median Annual Shares Unloaded	40,250	5,012

Stock sales related to the IPO may confound analysis of the partners' unloading. It is unsurprising that partners sold stock to the public in connection with the IPO; indeed, that was the purpose of the transaction. Table I shows that the partners engaged in much more unloading during the first four years after the IPO, as the IPO "lockup" restrictions on sales gradually lapsed.⁴¹ In this Essay, I focus on the relationship between stock-based pay and unloading.⁴² Thus, in assessing unloading in this Part, I emphasize unloading that occurred after 2004.⁴³

As noted in Part I, both theory and evidence suggest that a manager's unloading activity will depend on the ratio of the value of her stock holdings to her overall wealth. The schedules do not, however, reveal each partner's overall holdings of Goldman shares. I therefore estimate the influence of the partners' holdings on unloading in two ways. First, I proxy by partner seniority: Because partners will tend to accumulate shares over time, I distinguish among Goldman's managers based upon the length of time since each became a partner. Second, using public reports on stock ownership for each partner at the time of the IPO, I estimate each partner's overall stock ownership.⁴⁴ Throughout this Part, I control for both variables in assessing the partners' unloading.

41. In light of the IPO-related restrictions on sales, the volume of transactions between 2001 and 2004 may seem striking. Note, however, that the agreements permitted a committee of partners to waive these restrictions. See Original Shareholders' Agreement, *supra* note 33, art. VII, §§ 7.2–7.3.

42. I leave for future work potential implications of these data for study of insider trading. The results presented in this Part were unaffected by separate controls for changes in Goldman's stock price.

43. Notwithstanding the potentially confounding influence of IPO-related restrictions on the relationship between stock-based pay and unloading, I note that the results presented in this Part were unchanged when performed on a dataset including unloading activity before 2004. In addition, robustness checks performed on that dataset, see *infra* notes 44–46 and accompanying text, yielded results consistent with those described in this Part.

44. I am especially grateful to Chapman Wong for assistance in assembling these estimates. For details on these estimates and related robustness checks, see *infra* notes 111–113 and accompanying text.

C. Stock Compensation and Unloading

Goldman's partners receive substantial pay in the form of stock compensation and are subject to rigorous contractual restrictions on unloading. Like all employees, however, the partners may be risk-averse individuals who prefer a diversified portfolio to concentrated exposure to Goldman's stock. Is the stock compensation provided to the partners associated with greater levels of unloading? After considering the effects of unloading, has stock-based pay strengthened the partners' incentives?

1. *Unloading.* — One way to study the relationship between stock-based pay and unloading is to compare the unloading of partners who are paid the most stock with unloading by those who receive less pay in stock. The members of Goldman's management committee, on average, receive a larger proportion of their pay in the form of stock than their colleagues, so their unloading may tell us something about the relationship between stock-based pay and unloading. Because the partners' seniority also influences their propensity for diversification, however, I limit my analysis only to those managers who were partners before the IPO.⁴⁵ Table II below compares unloading by pre-IPO partners who are paid the most stock with unloading by other pre-IPO partners:⁴⁶

TABLE II.
UNLOADING BY PROPORTION OF STOCK COMPENSATION, 2005–2009

	Highest Proportion of Stock Compensation	All Other Pre-IPO Partners
Average Shares Sold Per Year	50,164	32,093**
Average Annual Proceeds from Sales	\$7,228,541	\$4,078,340**

Table II indicates that the partners receiving the greatest share of their pay in stock unload more than colleagues with similar tenure at the firm. Of course, it is still possible that these results are influenced by the partners' varying levels of ownership of Goldman stock. Multivariate regression analysis controlling for these differences, however, is consistent

45. Although the partners had varying levels of seniority at the time of the IPO, this analysis avoids comparison of partners elected after the IPO with long-tenured partners elected before the IPO. For regression analysis demonstrating the association between stock-based pay and unloading for the entire group of partners and featuring separate controls for each individual partner's level of seniority, see *infra* note 126 and accompanying text; *infra* tbl.VI (models (c) and (d)).

46. Throughout this Part, I use the standard indicia of statistical significance: "****" indicates significance at 99% confidence, "***" indicates significance at 95% confidence, and "*" indicates significance at 90% confidence. In Table II, these indicia refer to the coefficient for a dummy variable indicating whether the partner was a member of the management committee in a regression also controlling for year and firm size. All dollar figures in this Part are presented in inflation-adjusted 2010 dollars.

with the results described in Table II.⁴⁷ The evidence shows that partners whose pay structures include more stock-based pay unload more than colleagues who receive less of their pay in stock.

We can also measure the relationship between stock-based pay and unloading by comparing the stock-based pay received by each individual partner with that partner's unloading history. The filings do not provide detail on individuals' compensation, but the number of shares each partner receives in stock compensation can be estimated by allocating the stock-based pay received by the entire group of partners to individuals.⁴⁸ Based on these estimates, econometric analysis allows us to estimate the relationship between each share the partners receive in stock-based pay and unloading. The analysis shows that each share a partner receives in stock compensation is associated with approximately 0.8 additional shares unloaded, controlling for differences in the partners' seniority and stock holdings.⁴⁹

2. *Equity Holdings.* — Whether stock compensation succeeds in aligning incentives depends on whether managers' overall equity holdings increase after we account for unloading. Financial economists typi-

47. See *infra* note 126 and accompanying text; *infra* tbl.VI. The dataset also allows us to consider the relationship between the proximity of a partner's retirement and unloading. Although one might expect that a partner nearing retirement would be likely to engage in more unloading than a partner who intends to remain at the firm over time, partners in the latter situation may, anticipating the receipt of additional stock-based pay over a longer career, engage in more unloading as a means of diversification. In unreported analysis, I coded each of the partners who retired after 2004 for the number of years remaining until their retirement. (It is not possible to discern from the filings the exact retirement year for partners who retired before 2005.). I then separated the entire ten-year sample into the set of partners with more than two years remaining until retirement and the set of partners who will retire in two years or less. I found that, on average, the partners with longer horizons until retirement unload more than those who are nearing retirement, and tests of the differences in the means between the two groups indicate that these differences are statistically significant at 99% confidence. I do not report this result, however, because the analysis relies in part on evidence on unloading during the period when the IPO lockup remained in place. See *supra* note 41 and accompanying text.

48. For details on the allocation and related checks, see *infra* notes 117–120 and accompanying text.

49. See *infra* note 127 and accompanying text; *infra* tbl.VII. The dataset also permits an additional check on this result. In years prior to 2005, the filings include detail on unloading both by managers who remain employed by the firm and those who do not, because IPO-related restrictions on sales remained applicable to Goldman's managers notwithstanding the termination of their employment. See Original Shareholders' Agreement, *supra* note 33, art. I, § 1.1(h), (k), art. II, § 2.1. One might expect that, all things equal, those who leave the firm will be likely to engage in more unloading than those who stay. To the contrary, however, the evidence shows that those who remained with the firm—and continued to receive stock-based pay—engaged in more unloading than those who did not, a finding consistent with the hypothesis that Goldman's managers seek to diversify away the incentive effects of stock compensation. I do not report this analysis, however, because it relies exclusively on evidence on unloading while the IPO lockup remained in place. See *supra* note 41.

cally evaluate managers' equity holdings by measuring the impact of a 1% change in firm value on the employee's overall wealth.⁵⁰ The evidence allows us to examine how this measure has changed over time at Goldman. Has stock compensation strengthened the link between firm value and the average partner's personal wealth since 2004?

Comparing equity holdings at Goldman over time is complicated by the shifting population of the partnership. In 2005, 80 out of the firm's 221 pre-IPO partners, who held significant endowments of Goldman stock, were still with the firm. By 2009, only 45 of these partners remained. Nevertheless, one might expect that the firm's use of stock compensation could strengthen, or keep constant, the average partner's

50. There is considerable debate over the appropriate measure of the strength of the incentives created by stock-based pay. Compare Michael C. Jensen & Kevin J. Murphy, *Performance Pay and Top-Management Incentives*, 98 *J. Pol. Econ.* 225, 226 (1990) (suggesting that incentives related to marginal decisions, such as decision whether to consume corporate perquisites, should be expressed as change in value of manager's stock and options caused by constant change in firm value), with Brian J. Hall & Jeffrey B. Liebman, *Are CEOs Really Paid Like Bureaucrats?*, 113 *Q.J. Econ.* 653, 654 (1998) (arguing that incentives related to strategic decisions likely to affect firm returns should be expressed as change in value of manager's stock and options caused by given percentage change in firm's returns). Because Goldman's partners are charged with decisions that influence returns, I measure their incentives in terms of the change in the value of the average partner's holdings in response to a 1% change in the firm's stock price. Following previous work, I calculate this measure by dividing the stock price by 100, multiplying by the number of shares and options the employee holds, and weighting the latter by option "delta," which represents the change in the value of a stock option in light of a \$1 change in stock price. See Daniel Bergstresser & Thomas Philippon, *CEO Incentives and Earnings Management*, 80 *J. Fin. Econ.* 511, 519 (2006); John Core & Wayne Guay, *Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility*, 40 *J. Acct. Res.* 613, 629 (2002). The averages in Table III were calculated using this method and assuming an option delta of 0.9, the estimated average delta of options granted to the partners in 2005 and 2006 based on the historical volatility of Goldman Sachs's stock price. Average incentives without unloading were calculated by adding any sales of stock or exercises of options back to the aggregate ownership of the partners.

overall equity holdings during the period studied here. Table III below describes the effect of a 1% change in Goldman's value on the average partner's wealth over time, both after and before the effects of the partners' unloading.⁵¹

TABLE III. AVERAGE PARTNER EQUITY HOLDINGS, 2005–2009

	2005	2006	2007	2008	2009
Average Change in Wealth Due to 1% Change in Firm Value	\$319,550	\$279,896	\$307,627	\$121,826	\$218,940
Average Change in Wealth Due to 1% Change in Firm Value Without Unloading	\$1,996,350	\$2,353,025	\$2,462,659	\$1,241,191	\$2,349,560

As Table III shows, the average Goldman partner's equity holdings fell between 2005, when the IPO lockup expired, and 2009. In 2009, the average partner would have experienced a smaller change in personal wealth due to a change in Goldman's stock price than in 2005. And by 2009, the partners' incentives were less than 10% as strong as they would have been in the absence of unloading. Of course, it is far from clear that the level of the average partner's equity holdings in 2005, or the level that would have been achieved had the partners been completely prohibited from unloading, would have been optimal from shareholders' point of view.⁵² What is clear, however, is that the average partner's equity holdings provided less motivation to increase Goldman's value in 2009 than they had in 2005.⁵³ Although stock-based pay during this period may have

51. Because the average partner's incentive depends in part upon the value of each share of stock the partner holds, see Hall & Liebman, *supra* note 50, at 654–55, it might be argued that changes in the average partner's incentives, particularly from 2007 to 2008, can be explained by fluctuations in Goldman's stock price. While incentives remained relatively constant between 2005 and 2007, however, Goldman's stock price rose by more than 80% during that period. The relationship between stock price and incentives does, however, demonstrate the importance of detailed information on unloading for regulators concerned with bankers' incentives. In part due to a steep decline in stock prices, the value of the average partner's equity holdings reached their lowest level in the midst of the 2008 financial crisis—the moment when regulators might have been most concerned about the systemic significance of the partners' decisions. As I explain in Part III, information on unloading is necessary for regulators to have a complete understanding of these dynamics. See *infra* text accompanying notes 74–75.

52. Cf. John E. Core, Wayne R. Guay & Randall S. Thomas, Is U.S. CEO Compensation Inefficient Pay Without Performance?, 103 Mich. L. Rev. 1142, 1159–60, 1168 (2005) (finding that, although it is difficult to discern optimal level of managerial equity ownership for any particular firm, observing trend of managers' ownership over time provides helpful basis for measuring managers' incentives to maximize firm value).

53. It bears repeating that in late 2009 Goldman imposed additional limits on unloading for the members of its management committee, see *supra* note 35 and source cited therein, and that the effects of these restrictions are unlikely to be reflected in Table III, which includes only observations through the end of 2009. More recent filings suggest

served other important functions,⁵⁴ on average it does not appear to have strengthened the partners' incentives to maximize shareholder value.

D. *Unloading and Disclosure*

By comparing managers' unloading in years when they are subject to section 16 to their unloading in years when they are not, the data also permit us to consider the influence of section 16's disclosure rules on incentives.⁵⁵ Do Goldman's partners unload differently when they are required to disclose it?

Before proceeding I note that, because of the partners' agreement, in this case the unloading of *both* executives and non-executives is eventually made public in the schedules studied here. But, as previously noted, unloading by Goldman's non-executives has generally not been scrutinized because market participants do not expect that unloading information will be included in these schedules.⁵⁶ By contrast, as noted in Part I,

that the partners' ownership has increased in the two years following the adoption of these provisions. Compare Goldman Sachs Grp., Amendment No. 78 (Schedule 13D/A) (Dec. 1, 2011) (indicating that, as of end of 2011, partners as a group owned 13.78% of firm's stock), with Goldman Sachs Grp., Amendment No. 74 (Schedule 13D/A) (Dec. 9, 2009) (indicating that, as of end of 2009, partners as a group owned 8.60% of the firm's stock).

54. For example, the arrangements may have helped the firm retain employees, because recipients of stock compensation are generally not entitled to receive shares and options unless they remain employed by the firm during a specified period. For a discussion of other purposes of stock-based pay unrelated to the alignment of manager and owner incentives, see *supra* note 13 and sources cited therein.

55. As I have noted, see *supra* note 18, section 16(b) separately requires executives to disgorge "short-swing" profits obtained from a purchase and sale of the company's stock during a six-month period, 15 U.S.C. § 78p(b) (2006). It might be argued that differences between unloading by Goldman's executives and its non-executive senior managers are attributable to restrictions on short-swing trading rather than section 16's disclosure requirements. For two reasons, however, section 16(b)'s restriction on short-swing profits is unlikely to have an effect on unloading. First, both Goldman's executives and non-executives receive most of their shares of Goldman stock through awards of stock-based pay, and such awards can be, and in Goldman's case they are, structured to be exempt from section 16(b) pursuant to an SEC rule designed for that purpose. Romeo & Dye, *supra* note 21, § 10.12, at 1127 ("In nearly every instance, . . . it is possible to structure these transactions to fit within the exemption provided by Rule 16b-3 for transactions by an officer or director with the issuer."); see also 17 C.F.R. § 240.16b-3 (2011). Second, stock compensation at Goldman is subject to vesting restrictions that make it highly unlikely that shares sold in connection with stock-based pay could generate "short-swing" profits. See, e.g., Goldman Sachs Grp., Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A), at 24 (Apr. 1, 2011) (noting that stock-based pay for executives is subject to such restrictions over period of years exceeding six-month period covered by section 16(b)). Thus, it is unlikely that section 16(b)'s prohibition on short-swing profits has a significant influence on the partners' unloading activity.

56. See *supra* note 39 (noting that these filings have not been focus of reports by financial analysts who study value of Goldman's stock).

investors closely study section 16 filings for information on executives' unloading.⁵⁷

To be sure, non-executives at Goldman are likely aware that their unloading will be described in these schedules, and their behavior may be influenced by that knowledge. But, as explained below, notwithstanding any such effects, Goldman's section 16 executives unload much less than their non-executive counterparts. Thus, even where unloading by non-executives is subject to some disclosure, the application of section 16's disclosure rules is associated with lower levels of unloading.

1. *Unloading and Section 16.* — For partners who have served as one of Goldman's section 16 executives, the data include information *both* on unloading in years in which the partner was subject to section 16 and years in which the partner was not. Table IV below compares unloading by the same individual partners for years in which that partner's unloading was required to be disclosed under section 16 and years in which it was not:

TABLE IV. UNLOADING AND DISCLOSURE⁵⁸

	Disclosure Years	Non-Disclosure Years
Average Shares Unloaded, Per Partner	34,028	149,497***
Average Cash Proceeds From Shares Unloaded, Per Partner	\$4,276,596	\$16,766,667***

Table IV shows that the application of section 16's disclosure rules is associated with lower levels of unloading. The data show that, for the *same individual partners*, unloading varies significantly depending on whether the partner is subject to section 16's disclosure mandate. Econometric analysis permits further testing of these findings, including controls for individual-partner fixed effects.⁵⁹ The results in Table IV are robust to those tests.⁶⁰

57. See, e.g., George J. Benston & Robert L. Hagerman, Determinants of Bid-Asked Spreads in the Over-the-Counter Market, 1 J. Fin. Econ. 353, 359 (1974) (asserting that market-makers expand bid-ask spreads based, in part, on frequency of section 16 disclosure of insider trading activity).

58. "Shares unloaded" refers to the sum of the number of shares of stock the partner sold and the number of stock options the partner exercised. Indicia of significance refer to a dummy variable for whether the partner was designated as a section 16 executive in a regression also controlling for year and firm size.

59. In this context, individual-partner fixed-effects tests permit comparison of unloading activity for an individual partner depending on whether the partner is, in a given year, an executive subject to section 16. The approach permits one to control for all unobserved but stable characteristics of each individual partner, preventing those characteristics from biasing analysis of the relationship between disclosure and unloading activity. See, e.g., Paul D. Allison, Fixed Effects Regression Methods for Longitudinal Data (2005).

60. See *infra* tbl.VIII.

2. *Anticipatory Unloading.* — To the extent that managers are able to anticipate that they will become subject to section 16 in the future, they may respond by unloading ahead of time. A closer look at the data suggests that the partners may anticipate the application of section 16. Figure I summarizes the average proceeds from stock sales for partners who served as section 16 executives based on the number of years until the year in which the partner became a section 16 executive:

FIGURE I. UNLOADING IN ANTICIPATION OF DISCLOSURE⁶¹

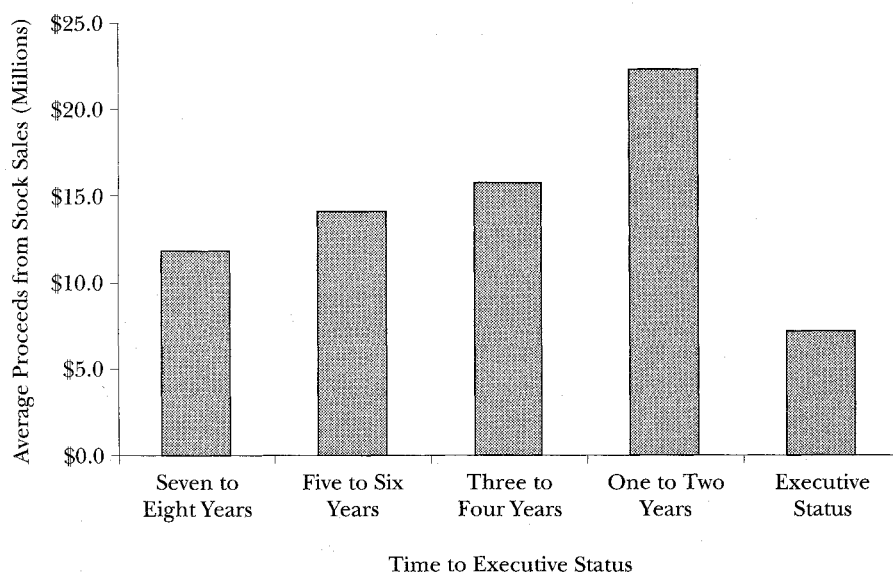


Figure I shows that unloading increases as a partner gets closer to the section 16 spotlight.⁶² Anecdotal evidence on individual executives is consistent with that finding.⁶³ Thus, the data suggest that Goldman's manag-

61. Tests of significance of differences in means showed that average proceeds during the two-year period prior to designation as an executive, and while the partners were executives, were different from average proceeds during the other periods described in Figure I at 99% confidence. In unreported analysis, I recalculated these data as the median, rather than mean, proceeds in each period; this analysis yielded results consistent with the trend in Figure I.

62. During years in which a partner who was once an executive is no longer subject to section 16, her unloading may be influenced by her proximity to retirement. Thus, I present in Figure I only data from years *before* the partner was designated an executive. In unreported analysis, however, I recalculated these data including both years *before and after* a manager's designation as an executive; the recalculated trend was consistent with the trend in Figure I.

63. For example, the firm's current chief executive officer was not designated an executive until 2002. In 2000 and 2001, his diversification activity generated more than \$62 million in proceeds. While this partner was a section 16 executive between 2002 and 2009, by contrast, the schedules examined here revealed only \$40 million in proceeds.

ers anticipate⁶⁴ the application of section 16, diversifying during periods when unloading will not be disclosed.⁶⁵ On the whole, the evidence suggests that disclosure rules influence unloading by Goldman's executives.

It may be the case, however, that executives would unload less even if they were not required to disclose it. For example, there may be cultural norms dictating that managers selected as section 16 executives should not sell the stock of their firms. If true, this hypothesis would suggest that disclosure does not influence executives' unloading activity. To analyze this possibility, I compared unloading by members of Goldman's management committee, who exercise a similar leadership role to that of executives, with unloading by Goldman's section 16 executives.⁶⁶ Table V below summarizes this comparison:

TABLE V. LEADERSHIP ROLES AND UNLOADING⁶⁷

	Management Committee Members Subject to Disclosure	Management Committee Members Not Subject to Disclosure
Average Shares Sold	60,327	81,906***
Average Proceeds	\$7,223,632	\$9,502,678***

The data show that, on average, management committee members unload at significantly higher rates than section 16 executives do. These managers are all in similarly senior leadership roles, but only executives are required to disclose their unloading. The results in Table V are robust to econometric analysis controlling for differences in the partners' ownership stakes.⁶⁸

64. Because the firm's managers exercise considerable discretion with respect to the identification of section 16 executives, see *supra* notes 20–21 and accompanying text, it is not surprising that the partners are able to anticipate when they will become subject to section 16. Of course, the partners may experience some uncertainty with respect to the years in which they will be deemed executives. But this uncertainty makes the trend presented in Figure I—which suggests that the partners anticipate the application of section 16 with some precision—even more striking.

65. Because section 16 requires disclosure of an employee's overall equity holdings when she is designated as an executive, the diversification-related benefits of anticipatory unloading may be mitigated by the costs associated with disclosing lower levels of overall holdings when the partner is designated an executive. Note, however, that section 16 does not require disclosure of the relationship between the executive's holdings and her overall wealth. Thus, it may be difficult for observers to infer from disclosure of the executive's overall holdings whether those holdings were reduced by unloading in anticipation of section 16.

66. See *supra* note 36 and accompanying text (noting that management committee oversees firm's operations, and that all of Goldman's executives sit on this committee).

67. Indicators of significance refer to a dummy variable indicating whether the partner was a section 16 executive in a particular year in a regression also controlling for year, firm size, and the partners' seniority.

68. See *infra* tbl.IX. It might also be argued that, in addition to executives' unique leadership role, executives are more frequently in possession of material nonpublic

On balance, the evidence suggests that cultural norms related to executives' leadership roles cannot fully explain the differences between unloading by executives and unloading by other senior Goldman managers. Instead, disclosure itself is associated with lower levels of unloading.

III. IMPLICATIONS FOR POLICYMAKERS AND INVESTORS

The use of stock-based pay to improve the incentives of senior managers at financial institutions in particular, and at public companies more generally, has drawn considerable recent attention from lawmakers. The evidence presented in this Essay suggests that managers unload in response to receiving stock-based pay—but that managers required to disclose unload much less.

This Part describes implications of these findings for current policy debates over the use of stock compensation. The evidence offers two important lessons for the regulators who must now monitor banker pay. First, these regulators should require banks to report detail on bankers' equity holdings, taking into account the effects of unloading, rather than the amounts of stock-based pay the bankers receive. Second, the regulators should be wary that section 16's disclosure rules will cause bank executives to accumulate large, undiversified holdings of company stock, potentially encouraging them to pursue excessive risk.

To the extent that unloading at Goldman is indicative of unloading at public companies more generally, shareholders and lawmakers who seek to make stock compensation more effective at aligning incentives should consider disclosure as a mechanism for limiting unloading. And lawmakers may need to reconsider the boundaries of section 16 in light of the relationship between disclosure and unloading activity.

Before proceeding, it bears repeating that, because the evidence presented in this Essay is limited to one firm, there is reason for caution in extending its conclusions to other public companies. But the evidence suggests that the lessons from these data may apply with at least equal force at other firms. Even at Goldman, which imposes unusual contractual limits on unloading, stock-based pay is quickly unloaded; thus, stock compensation is likely unloaded even more quickly at public companies that do not limit unloading by contract. And even at a firm that provides some public information about unloading by non-executives, managers unload less when they are subject to section 16 than when they are not. We would expect the effects of disclosure to be even more pronounced at those public companies where non-executives are never required to dis-

information, and thus unload less in order to avoid insider-trading liability. Note, however, that at Goldman the members of the management committee and the group of executives possess a virtually equivalent amount of such information. See *supra* note 36. Yet Table V indicates that management-committee members who are subject to section 16 unload far less than their colleagues. It does not appear that differences with respect to the partners' possession of material nonpublic information fully explains the different levels of unloading associated with the application of section 16's disclosure requirements.

close unloading. Although further study is needed before implications can be drawn for other public companies, there is reason to expect that the dynamics uncovered here are not limited to Goldman Sachs.

A. *Banker Incentives*

Federal regulators have now been given the difficult task of monitoring banker incentives. To the extent that the evidence at Goldman is indicative of the practices of other large financial institutions,⁶⁹ the evidence presented here offers these regulators two potential insights about the incentive effects of stock-based pay at these firms.

1. *Regulatory Analysis of Incentives.* — Federal regulators have repeatedly emphasized the importance of incentives for bankers and traders outside the group of executives.⁷⁰ This emphasis may reflect the fact that many of the employees responsible for risk-taking that contributed to the crisis were not executives. For example, none of the traders at American International Group's Financial Products division, the unit that contributed to the insurer's decline, was an executive.⁷¹ Perhaps taking their cues from the crisis itself, regulators have for the first time looked to the incentives of non-executives in their efforts to supervise bankers' pay.

New legislation requires large banks to report "the structures of all incentive-based compensation arrangements" to these regulators.⁷² To implement this directive, a group of federal agencies recently proposed rules that would require banks to provide "narrative" descriptions of compensation for non-executives.⁷³ The reports would tell regulators whether

69. Goldman is among the world's most well-known financial institutions, and its compensation practices, including its use of contractual unloading restrictions, appear to have influenced the practices of other major financial institutions. Compare Amended and Restated Shareholders' Agreement, *supra* note 37, § 2.1(b) (describing requirement that certain of Goldman's senior managers retain 75% of shares they receive in stock-based pay), with Citigroup, Inc., Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934 (Schedule 14A), at 16 (Mar. 12, 2010) (noting that members of Citigroup's senior management are required to "retain at least 75% of the equity awarded to them as incentive compensation").

70. See, e.g., Office of the Comptroller of the Currency et al., Guidance on Sound Incentive Compensation Policies 37–38 (2010) ("Incentive compensation arrangements for executive officers as well as for non-executive personnel who have the ability to expose a banking organization to material amounts of risk may, if not properly structured, pose a threat to the organization's safety and soundness."); see also Alvarez Testimony, *supra* note 1, at 3 ("[C]ompensation arrangements for executive and non-executive employees alike may pose safety and soundness risks if not properly structured . . .").

71. See Am. Int'l Grp., Inc., Annual Report (Form 10-K), at 15 (Feb. 28, 2008) (listing AIG's executive officers, including, among others, its general counsel and chief human resources officer—but excluding employees of its Financial Products unit).

72. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 956(a), 124 Stat. 1376, 1905 (2010) (to be codified at 12 U.S.C. § 5641).

73. Incentive-Based Compensation Arrangements, 76 Fed. Reg. 21,170, 21,177 (proposed Apr. 14, 2011) (to be codified at 12 C.F.R. pt. 42), available at <http://www.fdic.gov/news/board/2011rule2.pdf> (on file with the *Columbia Law Review*).

bankers are paid in stock, but would provide no information about their unloading activity.

The evidence from Goldman suggests that such descriptions will not give regulators a full picture of banker incentives. Non-executives, the evidence suggests, are likely to unload in response to receiving stock compensation, and indeed unload far more than the bank executives that have been the focus of previous empirical study.⁷⁴ The influence of stock-based pay on incentives, we have seen, depends on whether it leads to an increase in a manager's overall equity holdings *after* taking unloading into account. To the extent regulators seek to understand the incentives of the non-executive traders who take risk at large banks, they should require financial firms to report these managers' overall holdings of company stock.⁷⁵

The design of these reporting requirements, however, should draw on our understanding of the effects of disclosure on incentives. The signals produced by section 16's highly salient public disclosures, we have seen, are associated with lower levels of diversification activity. That result may well be consistent with the policy considerations that motivated the drafters of section 16. By contrast, bank regulators may not wish to facilitate signaling of this kind, which may encourage non-executives to hold undiversified portfolios of the bank's stock.

Importantly, regulators are in a position to keep information about bankers' overall equity holdings confidential.⁷⁶ Thus, there is relatively little risk that these reports will send costly signals to markets, for example, by suggesting that managers have unfavorable inside information. Instead, the information can be used solely for fulfilling the regulators' task of monitoring bankers' incentives.⁷⁷

74. See, e.g., Bebchuk et al., *supra* note 15, at 260 (documenting "large" amounts of unloading of stock-based pay by executives at Bear Stearns and Lehman Brothers); Bhagat & Bolton, *supra* note 15, at 15 (same, across broader group of firms). The evidence presented in this Essay suggests that non-executives at those firms likely engaged in more unloading than the executives subject to section 16's disclosure requirements.

75. It might be argued that regulators could simply assume, consistent with portfolio theory, that bankers will unload to the extent permitted by contract. At Goldman, however, the partners as a whole currently hold more shares than is required by their agreement. See Goldman Sachs Grp., Amendment No. 74 (Schedule 13D/A), at 1, 10 (Nov. 29, 2009) (noting that, although Goldman's contractual restrictions required partners to own 3.3 million shares as of end of 2009, at that time partners owned more than 16.2 million shares). Thus, a uniform prediction that bankers will unload to the extent that doing so is permitted by contract will not give regulators a full picture of the incentive effects of stock-based pay.

76. Incentive-Based Compensation Arrangements, 76 Fed. Reg. at 21,177 (noting that regulators will "maintain the confidentiality of information . . . [requested under their authority to regulate incentives at financial institutions], and the information will be nonpublic").

77. The regulators could also keep this information confidential inside the firm to avoid transmitting signals among bankers and their colleagues. See *id.*

2. *Risk-Taking by Bank Executives.* — It is now well accepted that, for at least two reasons, shareholders in large banks prefer that the bank pursue risks that are excessive from a social point of view. First, shareholders capture the full upside from such risk-taking, while some of the downside of bank failures is borne by the government, both as an insurer of deposits and as a provider of bailout financing. Second, shareholders do not internalize costs related to the systemic effects of bank failures.⁷⁸ Thus, bank shareholders do not internalize all of the costs of the bank's risk-taking activity.

On the basis of these insights, in the short time since the crisis, an extensive literature has emerged on optimal incentives for bank executives.⁷⁹ Although proposals for improving banker incentives vary considerably, most commentators agree that, because shareholders prefer that the bank take socially excessive risk, there is some danger in requiring bank executives to hold large amounts of the firm's stock. The problem is that these holdings give bank executives, like shareholders, reason to prefer that the bank take too much risk.

The evidence presented here suggests that section 16 exacerbates this problem. If disclosure rules discourage bank executives from unloading, they will hold large, undiversified positions in their employer's stock, encouraging them to pursue excessive risk.⁸⁰ Indeed, many have argued that, during the financial crisis, bank executives with concentrated stock holdings resisted steps that, while bad for bank equity holders, might

78. See generally Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers' Pay*, 98 *Geo. L.J.* 247, 284–85 (2010).

79. *Id.* (suggesting that regulators require that bank executives' compensation depend both on value of firm's equity and value of its debt to address bank shareholders' incentives to pursue excessive risk); Frederick Tung, *Pay for Banker Performance: Structuring Executive Compensation for Risk Regulation*, 105 *Nw. U. L. Rev.* (forthcoming 2012) (manuscript at 24), available at <http://ssrn.com/abstract=1546229> (on file with the *Columbia Law Review*); Jeffrey N. Gordon, *Executive Compensation and Corporate Governance in Financial Firms: The Case for Convertible Equity-Based Pay 2* (Columbia Law Sch. & European Corp. Governance Inst., Working Paper No. 373, 2010) (on file with the *Columbia Law Review*) (arguing that executives' undiversified exposure to their banks' stocks gave them reason to pursue excessive risk and resist needed recapitalizations during crisis); see also Richard Squire, *Shareholder Opportunism in a World of Risky Debt*, 123 *Harv. L. Rev.* 1152, 1155 (2010) (showing that costs related to shareholders' preference for correlation between asset values and contingent liabilities are exacerbated by stock-based pay).

80. In light of the evidence that Goldman's partners unload in anticipation of the application of section 16, see *supra* text accompanying notes 62–64, it might be argued that anticipatory unloading adequately diversifies executives' portfolios, eliminating their incentives to seek out excessive risk. But even if a manager succeeds in fully diversifying away her exposure to the company's stock before her appointment as an executive, her receipt of stock-based pay after she becomes an executive, in tandem with the disclosure requirements of section 16, may lead to a substantially undiversified position over time, giving rise to incentives to take excessive risk. See *supra* note 63 (noting that, despite substantial unloading before his appointment as an executive, Goldman Sachs's CEO has now accumulated substantial position in the company's stock).

have reduced the systemic consequences of the crisis.⁸¹ At public companies generally, section 16's effects on managerial incentives may well be laudable. At banks, however, federal regulators should be wary that section 16 has the unintended consequence of encouraging executives to hold dangerously undiversified positions in the stock of large financial firms.⁸²

Taken together, these findings suggest that regulators should pay close attention not only to *whether* bankers' incentives are disclosed, but also to *whom*. On the one hand, disclosure of non-executives' equity holdings to regulators may provide critical information on the incentives of risk-takers at large financial institutions. On the other, disclosure of executives' unloading activity to the public may lead executives to hold undiversified portfolios that lead to excessive risk-taking. Regulators should carefully consider these effects when designing the disclosure rules that govern bankers' incentives.

B. Incentives at Public Companies

To the extent that unloading at Goldman is indicative of unloading at public companies more generally,⁸³ the evidence presented here offers lessons for investors and lawmakers seeking to make stock-based pay more effective at aligning incentives. Most stock compensation at large public companies is given to non-executives. The evidence from Goldman suggests that non-executives unload most of their stock-based

81. See Gordon, *supra* note 79, at 2 ("[T]he critical point from the perspective of systemic risk mitigation was that [as] firms ran into financial difficulty, the[ir] executives' large equity stakes created an ever-widening gap between their interests and the interests of non-managerial shareholders (as well as the social interest).").

82. Of course, executives might not hold undiversified positions of this kind if they were simply paid in cash rather than stock. Shareholders prefer that executives be paid in stock, however, and regulators have indicated that they will look favorably upon stock-based pay for executives of large financial institutions. See Incentive-Based Compensation Arrangements, 76 Fed. Reg. 21,170, 21,212 (proposed Apr. 14, 2011) (to be codified at 12 C.F.R. pt. 42), available at <http://www.fdic.gov/news/board/2011rule2.pdf> (on file with the *Columbia Law Review*). To the extent that stock compensation remains a standard feature of banker pay, the evidence presented here shows that regulators should be wary of the effects of section 16 on bank executives' freedom to diversify.

83. Particularly because there is some evidence that industry structure influences compensation practices and incentives, see, for example, Antonio Falato & Dalida Kadyrzhanova, *Optimal CEO Incentives and Industry Dynamics* 7 (2007) (unpublished manuscript) (on file with the *Columbia Law Review*) (arguing that firm and industry heterogeneity affect optimal level of CEO incentives), the evidence from Goldman may be more indicative of pay practices at other banks than at other public firms more generally. However, as I have previously noted, see, for example, *supra* note 33 and accompanying text, Goldman is unusual among public companies in that it contractually restricts unloading and provides disclosure of unloading by non-executives—but the evidence shows that its employees unload stock-based pay and unload less when they are required to disclose. These dynamics may be even more prevalent at other public firms; in general, these firms neither contractually limit unloading nor require disclosure of unloading by non-executives.

pay. The data also, however, point to disclosure as a potentially important new mechanism for counteracting managers' tendency to unload.

In addition, the evidence suggests that section 16 has an important and overlooked effect on incentives. By encouraging managers to hold a concentrated position in the company's stock, section 16's disclosure rules may influence the relationship between ownership and control at all public firms. To the extent that the rules have this effect, lawmakers should reconsider their boundaries to ensure that they apply only to those managers for whom stock ownership is an effective incentive-alignment device.

1. *Disclosure and Incentive Alignment.* — Several commentators have recently criticized managers' freedom to unload stock compensation. They argue that unloading undermines the incentive benefits that stock-based pay could otherwise confer upon shareholders.⁸⁴ Although paying employees in stock rather than cash may have benefits unrelated to incentives,⁸⁵ these commentators claim that public companies instead use stock-based pay as camouflage, convincing shareholders that managers' and owners' interests are aligned while allowing employees to unload.⁸⁶ Thus, they have encouraged shareholders to pressure corporate boards to restrict unloading by contract.⁸⁷

The evidence from Goldman suggests that disclosure may be an alternative mechanism for limiting unloading. To be sure, disclosure is a comparatively blunt tool, offering less precision than contractual restrictions on unloading. But directors and executives have little reason to bargain for contractual restrictions on unloading.⁸⁸ Such restrictions also may require continuous re-contracting in order to provide managers with optimal incentives, leading to substantial adjustment costs.⁸⁹ And, as

84. E.g., Bebchuk & Fried, Long-Term Performance, *supra* note 12, at 1923–24.

85. These benefits include, for example, preservation of the firm's liquidity, reducing costs of capital related to adverse selection, and corporate tax benefits. See *supra* note 13 and accompanying text.

86. See, e.g., Lucian Bebchuk & Jesse Fried, Pay Without Performance: The Unfulfilled Promise of Executive Compensation 178 (2004) (describing "inconspicuous diversification benefits" that managers obtain by unloading).

87. E.g., Bebchuk & Fried, Long-Term Performance, *supra* note 12, at 1928.

88. It might be argued that executives, who are subject to section 16 and thus likely to unload less of their stock-based pay than other employees, have reason to pursue contractual restrictions that limit their colleagues' unloading. But even executives own relatively small proportions of the firm's stock, and thus internalize few of the gains that will be generated by closer alignment of colleagues' incentives with those of shareholders. By contrast, demanding that these colleagues accept contractual restrictions on unloading may impose substantial professional and social costs on executives. Moreover, executives often return to non-executive status after serving as executives; anticipating this, they may prefer not to impose unloading restrictions on non-executives so that they can benefit from the freedom to unload when they are no longer subject to section 16. See *supra* note 61 (describing analysis showing that Goldman executives engaged in more unloading when they were no longer subject to section 16).

89. See John F. Core & David F. Larcker, Performance Consequences of Mandatory Increases in Stock Ownership, 64 J. Fin. Econ. 317, 318 (2002) (describing this possibility,

other commentators have noted, contractual restrictions on unloading appear to be expensive to negotiate and enforce.⁹⁰ Thus, shareholders seeking to align manager and owner incentives could advocate that companies disclose non-executives' unloading.⁹¹ This information would allow investors to evaluate whether stock-based pay aligns managers' and owners' interests—or serves as camouflage, as its critics contend.⁹²

Moreover, disclosure of non-executives' unloading would permit directors and shareholders to meaningfully monitor incentives. Within a particular firm, directors could better assess whether contractual restrictions on unloading are calibrated appropriately, leaving employees with the portfolio of company stock that is optimal from shareholders' perspective. In addition, investors could compare unloading across firms to determine whether employees at competing companies have comparable incentives to maximize firm value.

To the extent that shareholders lack incentives to insist that directors require disclosure of this type,⁹³ lawmakers convinced of the need for mandatory rules could consider two modifications to existing law. First, securities rules already require public companies to disclose detailed information on company-wide stock compensation, including the total amount of stock paid to all employees.⁹⁴ The rules do not, however, require disclosure of the employees' unloading.⁹⁵ Such disclosure is un-

noting that adjustment costs may prevent continuous re-contracting, and describing empirical evidence that periodic re-contracting in form of stock-ownership requirements is associated with greater levels of managerial ownership and improvements in performance).

90. See Bebchuk & Fried, *Long-Term Performance*, *supra* note 12, at 1934–35 (noting that stock-ownership requirements in many public companies are “purely voluntary” and include no “penalty for not meeting the target”); Schizer, *supra* note 12, at 461 (describing public reports noting that stock-ownership requirements are frequently not enforced at large public companies).

91. It might be argued that, rather than provide such disclosure, boards of directors will simply opt to pay non-executives in cash rather than stock. Note, however, that directors commonly pay public-company executives in stock despite the fact that the executives' unloading is subject to section 16's rigorous disclosure regime.

92. Of course, to the extent that shareholders of public-company banks pursue this disclosure, banking regulators should pay careful attention to the influence of disclosure on bankers' undiversified holdings of company stock. See *supra* Part III.A.2.

93. For the seminal discussion on the limitations of shareholder oversight in public companies, see John C. Coffee, Jr., *Liquidity Versus Control: The Institutional Investor as Corporate Monitor*, 91 *Colum. L. Rev.* 1277, 1281 (1991).

94. See, e.g., 17 C.F.R. § 229.201(d)(1) (2011) (requiring disclosure of, *inter alia*, number of securities issuable to employees pursuant to equity compensation plans and weighted-average exercise price of outstanding stock options).

95. While it is possible to estimate the number of stock options non-executives exercise each year with information that must be provided under current disclosure rules, see Core & Guay, *Stock Option Plans*, *supra* note 9, at 278, these disclosures do not provide information on the number of shares sold by this group of employees, making it impossible to evaluate unloading activity or the employees' equity holdings.

likely to be administratively expensive⁹⁶ and may offer shareholders valuable information about the effectiveness of stock-based pay. Second, the major securities exchanges have long required that shareholders vote to approve stock compensation plans.⁹⁷ These rules force companies to disclose the terms of the plan but not restrictions on unloading. Requiring firms to disclose such restrictions—or the lack thereof—might give shareholders important information on the value of stock-based pay.

Of course, there would also be costs to forcing non-executives to hold concentrated positions in public companies' stock. For one thing, we can expect these employees to demand higher wages to compensate them for the additional risk these arrangements would require them to bear. There may be firms in which these costs outweigh the incentive-related benefits of managerial stock ownership. For firms in which the benefits of incentive alignment outweigh these costs, however, the evidence presented in this Essay suggests that disclosure may offer an effective means of restricting unloading.

2. *Scope of Section 16.* — Section 16 requires public companies to identify a few top “executives” and publicly disclose their unloading. The provision, developed as part of the Securities Exchange Act of 1934, was influenced by a model of industrial organization that was prominent at that time.⁹⁸ In this model, a few managers exercise centralized control over public-company resources. This model may not reflect the distribution of control at public companies today.⁹⁹ Yet the evidence presented here suggests that the model continues to influence the link between ownership and control in large public companies.

To the extent that section 16's disclosure rules are underinclusive, failing to capture managers who exercise control, the rules will not deter these managers from unloading. To be sure, firms could simply limit unloading by these managers by contract. And contract may offer the impor-

96. Most public companies are party to stock compensation agreements that permit low-cost monitoring of unloading of stock awards and stock options acquired in connection with stock-based pay. See, e.g., Schizer, *supra* note 12, at 449 (“Exercise [of compensatory stock options] is . . . relatively easy . . . for firms to police.”).

97. E.g., N.Y. Stock Exch., NYSE Listed Company Manual § 303A.08, available at http://nysemanual.nyse.com/LCMTTools/PLatformViewer.asp?selectednode=chp_1_4_3&manual=%2F1cm%2Fsections%2F1cm-sections%2F (on file with the *Columbia Law Review*) (last visited Jan. 26, 2012).

98. See *supra* text accompanying notes 28–30 (describing influence of Berle and Means's observations on drafters of section 16).

99. To draw one example from the case studied in this Essay, Goldman Sachs's organizational structure suggests that its management committee exercises control over the firm's resources. See *supra* text accompanying note 36. Fewer than half of the thirty members of the committee, however, are executives subject to section 16. Compare Goldman Sachs Grp., Leadership: Management Committee, <http://www2.goldmansachs.com/who-we-are/leadership/management-committee/index.html> (on file with the *Columbia Law Review*) (last visited Jan. 27, 2012) (listing 29 members of Goldman's management committee), with Goldman Sachs Grp., Annual Report (Form 10-K), at 50–51 (Mar. 1, 2010) (listing firm's nine executive officers).

tant advantage of allowing managers to engage in the amount of unloading that is optimal for the particular manager and firm. But, as noted above, directors and executives at public companies may lack incentives to impose these restrictions on non-executives, and there is evidence that these contracts are costly to develop and enforce.¹⁰⁰ Disclosure may offer a lower-cost means of aligning shareholder and manager interests.

To the extent that section 16 is overinclusive, it may deter unloading by managers for whom stock-based pay is not an effective means of aligning incentives.¹⁰¹ Thus, the rules may impose unnecessary costs on shareholders, who will be forced to compensate the manager for holding a large stake in the company even though the incentive-related benefits of that stake are limited.¹⁰²

For present purposes, it is not important whether the scope of section 16 accurately reflects the distribution of control at all public companies. What is important is that, to the extent that its disclosure rules discourage unloading, choices about the scope of section 16 are likely to have implications for incentive alignment at public companies. Thus, lawmakers should reassess the scope of section 16 in light of these implications. Of course, any such assessment should consider section 16's traditional role as a means of regulating insider trading.¹⁰³ In particular, the rules may provide market participants with an important source of information about insiders' views of the firm's value.¹⁰⁴ The proposed

100. See *supra* note 12 and sources cited therein (describing reports that policies requiring executives to own minimum specified amounts of firm's stock are rarely enforced and require relatively low levels of stock ownership). But see *supra* text accompanying note 69 (suggesting that these contractual arrangements are now used more frequently, particularly among financial institutions).

101. Although the decision as to which managers will be deemed executives is generally left to the companies themselves, see *supra* note 21 and accompanying text, the rules specify some roles in large public companies that are required to be included within section 16's scope, see 17 C.F.R. §§ 240.16a-1(f), 240.16a-2 (2011).

102. It might be argued that the firms could simply choose to compensate these executives in cash rather than stock to avoid creating a portfolio of shares that will be costly for the manager to diversify. But the decision not to pay the manager in stock will, like unloading, itself be subject to disclosure, and the firm and manager would risk signaling and reputational costs similar to those that arise in connection with unloading.

103. Thus, any reassessment of section 16 should carefully consider the implications of any changes in the scope of section 16(b)'s bar on short-swing profits. See *supra* note 55. Many commentators have forcefully argued that, because none of its provisions turns on the use or possession of material nonpublic information, section 16 is an ineffective deterrent to insider trading. See, e.g., Clark, *supra* note 8, § 8.6, at 295. Whether or not section 16 provides valuable regulation of insider trading activity, however, the evidence presented here suggests that its disclosure provisions have important implications for managerial incentives.

104. The literature is divided with respect to whether disclosures of this kind provide markets with valuable information that contributes to efficiency in the pricing of securities. For early empirical work suggesting that insider trading carries unique informational value, see James H. Lorie & Victor Niederhoffer, *Predictive and Statistical Properties of Insider Trading*, 11 *J.L. & Econ.* 35, 35 (1968); Myron Scholes, *The Market for Securities: Substitution Versus Price Pressure and the Effects of Information on Share Prices*, 45 *J.*

reassessment, however, would focus not on whether managers are “executives” but instead on whether they actually exercise control over the corporation. Thus, lawmakers should be able to preserve the information-production benefits of section 16 while also considering the potential effects of its disclosure rules on managerial incentives.¹⁰⁵

IV. CONCLUSION

The federal regulators who oversee banker pay have come to appreciate the importance of incentives for bankers beyond the small group that pre-crisis rules identify as “executives.” Although these non-executive managers and traders receive much of their pay in the form of stock, little is known about whether they unload. And no previous study has considered the effects of disclosure rules on unloading activity.

This Essay has presented the first empirical study of unloading by all of the senior managers of a large financial institution. The study shows that bankers respond to receiving stock-based pay by unloading. The data also show that bankers unload much less in years in which they are required to disclose than in years in which they are not.

To the extent that bankers at other firms unload in the same way—and there is good reason to believe that they do—regulators need to adjust. First, their current focus on bankers’ raw stock compensation is incomplete. To understand incentives, what regulators really need is information about bankers’ overall equity holdings, including any effects of unloading. And the regulators should be wary that section 16 may induce bank executives to dangerously concentrated positions in their bank’s stock, encouraging them to take excessive risk. More generally, investors and lawmakers should consider that disclosure may be an effective alternative to contract as a mechanism for limiting unloading. And regulators should reconsider the boundaries of section 16, requiring disclosure only for managers for whom stock ownership is an effective means of aligning incentives.

The evidence presented here also points toward broader insights about stock-based pay that go beyond the work of bank regulators. Previous scholarship has argued that unloading at the lower levels of the firm

Bus. 179, 201–02 (1972). With respect to section 16 disclosures in particular, compare Ji-Chai Lin & Michael S. Rozeff, *The Speed of Adjustment of Prices to Private Information: Empirical Tests*, 18 J. Fin. Res. 143, 156 (1995) (providing empirical analysis suggesting that insider trading conveys important information to markets), with Joseph Lakonishok & Inmoo Lee, *Are Insider Trades Informative?*, 14 Rev. Fin. Stud. 79, 107–09 (2001) (providing empirical analysis suggesting that insider trading does not convey meaningful price signals).

105. The SEC last considered the scope of section 16 in 1992. See SEC, *Ownership Reports and Trading by Officers, Directors and Principal Security Holders*, 56 Fed. Reg. 7242, 7242 (Feb. 21, 1991). In determining the scope of the rules, the Commission did not include incentive alignment among the considerations that firms should use in determining whether a particular manager should be included among the group of executives. See *id.* at 7242–43.

may help convey critical operational information to executives.¹⁰⁶ For example, high levels of unloading in a single division may tell a large firm's executives something about the division's performance or future prospects. Similarly, unloading by mid-level managers may also serve a useful internal-governance function, as managers who unload less than their colleagues may thereby reveal their commitment to the firm. This internal-governance function may be especially important at firms, like banks, in which the decisions of lower-level managers can result in significant destruction of firm value. Further empirical study is needed to evaluate these hypotheses. This Essay has, however, offered a first glimpse of what can be learned by studying unloading throughout a firm's managerial hierarchy.

106. See, e.g., Henry G. Manne, *Insider Trading: Hayek, Virtual Markets, and the Dog That Did Not Bark*, 31 J. Corp. L. 167, 185 (2005) ("Stock trading by informed individuals can produce information that may be extremely valuable to managers of publicly held companies."); see also Huddart & Lang, *supra* note 15, at 4 (using data on stock option exercises by lower-level employees to "investiga[te] . . . the distribution of price-relevant information outside the executive suite").

APPENDIX

A. *Data*

Because they collectively own more than 5% of the stock of their firm, the partners of Goldman Sachs are required to file schedules under section 13(d) of the Securities Exchange Act of 1934.¹⁰⁷ The partners filed their first Schedule 13D in 1999 and amended it seventy-four times during the period studied here. All seventy-five filings used to assemble the dataset are available on the SEC website, and all of the data used in this study are available upon request.

1. *Dataset Assembly.* —

a. *Unloading.* — Data on unloading transactions were drawn by hand from the partners' Schedule 13D and subsequent amendments. To avoid errors in attributing transactions to partners, I excluded transactions involving trusts, such as those established to settle litigation or divorce proceedings, and transactions conducted by groups of partners. These exclusions involved fewer than 5% of all transactions described in the filings during my sample period. Until mid-2004 the filings included transactions by both partners and non-partner employees called managing directors. For consistency across the ten-year sample, I excluded transactions by managing directors from the dataset.

The partners' Schedule 13D must be amended "[i]f any material change occurs in the facts set forth in the [prior] Schedule 13D," "including, but not limited to, any material increase or decrease in the percentage" of their ownership.¹⁰⁸ The schedules include "any [unloading] transactions" "that were effected during the past sixty days or since the most recent filing of Schedule 13D . . . whichever is less."¹⁰⁹ The sixty-day limitation results in the exclusion of unloading that occurs after one amendment but more than sixty days before the next.

A comparison between the schedules and the section 16 information filed for the firm's executives showed that the dataset included approximately 70% of the executives' unloading during the sample period.¹¹⁰ Thus, the dataset likely omits some unloading transactions, and therefore

107. 15 U.S.C. § 78m(d) (2006). Section 13(d) requires a report to be filed by any "person" owning more than five percent of a registered equity security; two or more persons acting as a group "for the purpose of acquiring, holding, or disposing of" the security are deemed a single "person," *id.* § 78m(d)(3). The partners own more than 5% of Goldman's stock and act as a group with respect to its disposition, so they are required to file a Schedule 13D. The firm knew that the agreement would implicate Schedule 13D; the agreement itself anticipates the disclosures. Original Shareholders' Agreement, *supra* note 33, § 6.3(a).

108. 17 C.F.R. § 240.13d-2(a) (2011).

109. SEC Form of Schedule 13D, 17 C.F.R. § 240.13d-101, item 5.

110. For purposes of this analysis, the section 16 data were drawn from the proprietary Thomson Reuters dataset. See WRDS, Wharton Research Data Services, <http://wrds.wharton.upenn.edu> (last visited Jan. 27, 2012). After searching that dataset for all transactions involving Goldman Sachs executives between 2000 and 2009, unloading transactions were isolated and consolidated by executive and year. The resulting data on

underestimates the total number of shares unloaded by the partners as a whole. It is unlikely, however, that these omitted transactions bias analysis of the relationship between stock-based pay and unloading.¹¹¹ There is also no reason to expect that these omissions bias the dataset with respect to the relationship between disclosure and unloading activity. As a check, however, I recalculated my analysis of that relationship using section 16 data (which includes all unloading transactions) for periods during which the partners served as executives and section 16 data were available, but Schedule 13D data (which omits some unloading transactions) for periods during which the partners did not serve as executives or for which data were unavailable. Although this approach necessarily biases the analysis against the hypothesis that disclosure is associated with lower levels of unloading (because section 16 data include all unloading transactions while Schedule 13D disclosures do not), the results from that analysis were consistent with the results described in the Essay.

b. *Partner Characteristics.* — Detail on the number of years each individual has been a partner was drawn by matching the partners listed in Schedule 13D to the partners identified in the signature pages of the partners' agreement at the time of the IPO¹¹² or the firm's biannual announcements of partnership elections.¹¹³ The members of the management committee were identified by reference to the list published on the firm's website.¹¹⁴ Section 16 executives were identified from the firm's annual reports.¹¹⁵ Because unloading activity may be influenced by the proximity of a partner's retirement, I created a separate variable approximating the number of years until the partner's retirement for partners that retired after 2004. The results described below were generally unchanged when I controlled for this variable, although the variable was economically and statistically significantly correlated with unloading activity.¹¹⁶

shares and stock options unloaded were then compared to data provided for those individuals in Schedule 13D.

111. To the contrary, periods during which partners simultaneously receive stock-based pay and unload might be particularly likely to be omitted from the dataset, because the offsetting transactions might yield no "material increase or decrease in the percentage" of the partners' ownership, *supra* text accompanying note 108. Thus, the finding that greater levels of stock-based pay are associated with higher levels of unloading included in this dataset is particularly striking.

112. Original Shareholders' Agreement, *supra* note 33, at 26–32.

113. E.g., Press Release, Goldman Sachs Grp., Goldman Sachs Announces New Partnership Pool, GoldmanSachs.com (Oct. 18, 2000), <http://www2.goldmansachs.com/our-firm/press/press-releases/archived/2000/2000-10-18.html> (on file with the *Columbia Law Review*).

114. Goldman Sachs Grp., Leadership: Management Committee, *supra* note 99.

115. See, e.g., Goldman Sachs Grp., Annual Report (Form 10-K), at 24 (Feb. 22, 2002) (identifying executives at Goldman Sachs).

116. See *supra* note 47 (describing this analysis). The variable measures the number of years remaining until the individual no longer appears on the firm's Schedule 13D. This variable is an imperfect proxy for partners' actual retirement date, because some Goldman

2. *Estimated Variables.* —

a. *Individuals' Stock Compensation.* — Schedule 13D specifies the number of shares delivered, or options vested, for the partners as a group respective of previously granted stock-based pay. I estimate the pay received by each partner by allocating the shares and options received by the entire group to individuals. According to the firm's compensation policies, members of its management committee receive the highest proportion of their compensation in stock-based pay.¹¹⁷ Thus, in allocating shares and options received by all partners, I weigh the firm's executives and management committee members most heavily, assuming that partners who held this status at any time during my sample period received three shares or options for each share or option received by the other partners, who are assumed to receive an equal proportion of the remaining shares delivered to all the partners.¹¹⁸

Because the data only permit approximations of individual partners' stock compensation, as a robustness check I ran the analysis described below using a range of assumptions about the ratio between the stock-based pay received by executives and management committee members and by other partners. The results described below are robust to any integral ratio greater than one—that is, any assumption under which the number of shares and options received by partners who were executives and management committee members during my sample period was greater than that received by other partners.

It might be argued that an allocation of stock and options favoring management committee members is likely to generate a correlation between stock-based pay and unloading because the data show that members of the management committee generally unload more than other partners.¹¹⁹ But the distribution is also weighted toward section 16 executives, who unload less, which would tend to undermine the relationship.¹²⁰ On balance, it is unlikely that these estimates bias analysis of the relationship between stock-based pay and unloading.

b. *Individuals' Stock Ownership.* — The Schedule 13D does not reveal individual partners' ownership levels. I constructed an estimate of each partner's ownership based upon public reports of individuals' ownership

managers who lose their status as partners remain employed by the firm. See Susanne Craig, *At Goldman, Partners Are Made, and Unmade*, N.Y. Times, Sept. 13, 2010, at A1 (describing employees at Goldman who have been "de-partnered"). This phenomenon appears to be relatively rare, however. *Id.*

117. Goldman Sachs Grp., *Compensation Practices*, *supra* note 35, at 13.

118. I am grateful to compensation consultants and attorneys who suggested this approach during confidential interviews. For filings prior to mid-2004, when non-partner managing directors were included in Schedule 13D, each managing director was also allocated one-third of a share or option for each share or option allocated to partners who were not executives or management committee members.

119. See *supra* text accompanying note 46 & tbl.II.

120. See *supra* text accompanying note 58 & tbl.IV.

at the time of the IPO¹²¹ and changes to that ownership during the sample period through receipt of stock compensation (additions) and unloading (subtractions).¹²²

No such report is available for partners elected after the IPO, so I use an alternative method for these partners, assuming that they enter the partnership with approximately zero exposure to the firm's stock. This assumption is consistent with the absence of unloading restrictions on shares received before the manager is elected partner.¹²³ I then estimate the newly elected partner's ownership each year using the same method, adding my estimate of the number of shares the partner receives in stock-based pay and subtracting shares the partner unloads.

This estimate of partners' ownership is likely to be imprecise. For example, to the extent that the schedules omit unloading transactions, the ownership variable may overestimate a partner's ownership. These errors may, particularly in the later years in the sample, result in significant overestimation of partners' ownership. Thus, in the analysis described below, I include both the estimated ownership variable and dummy variables controlling for partner seniority in an effort to capture the effect of each partner's overall stock ownership on unloading.

B. Analysis

Below I present the results of econometric analysis that estimates the statistical relationships described in the Essay. Tables VI through IX provide correlation coefficients and measures of statistical significance from ordinary least squares regressions using the panel data described above. Standard errors are given in parentheses. These models, which were chosen for simplicity,¹²⁴ include two types of longitudinal controls: First,

121. Susanne Craig, Ben Protess & Evelyn M. Rusli, *The Goldman Sachs Diaspora*, N.Y. Times Dealbook (May 16, 2011, 9:16 PM), <http://dealbook.nytimes.com/2011/05/16/the-goldman-sachs-diaspora/> (on file with the *Columbia Law Review*) (documenting approximate ownership of each partner at time of Goldman's IPO).

122. For purposes of these estimates I treat a share of stock and a stock option each as providing one share of ownership in the firm, and the sale of a share of stock and exercise of a stock option each as reducing a partner's ownership in the firm by one share. Although options provide less marginal exposure to changes in firm value than shares of stock, see Hall & Liebman, *supra* note 50, at 671–72, since historical option delta at Goldman is approximately 0.9, see *supra* note 50, this difference is unlikely to have a significant effect on the results.

123. Because there is no evidence that any partner was short Goldman shares during my sample period, I made adjustments to ensure that, in general, partners did not reach negative levels of ownership.

124. The results presented here are robust to more extensive models controlling for variables reflecting current and future stock returns, which could capture effects of the partners' expectations about changes in future stock prices on unloading activity. The results are also robust to models separately controlling for changes in the partnership's overall level of stock ownership, which may capture changes in the partners' mutual expectations about unloading activity by their colleagues. In addition, the structure of the dataset raises some possibility of serial correlation of variables over time. To address that

models without year fixed effects include controls for year, equity volatility, and the firm's changing size (measured as the log of firm assets); second, each table reports the results of a model including year fixed effects.¹²⁵ In the tables below, mean values for dependent variables are also given in parentheses.

1. *Compensation Structure and Unloading.* — To estimate the relationship between compensation structures that feature more stock-based pay and unloading, I specify a multivariate regression model in which the dependent variable is the number of shares sold by a partner. In models (a) and (b), my analysis is limited to pre-IPO partners; models (c) and (d) include all partners, with separate controls for partner seniority. My analysis is limited to the years 2005–2009 to address potentially confounding effects of unloading restrictions related to the IPO. “Highest Proportion of Pay in Stock” is a dummy variable reflecting whether the partner is on the management committee.¹²⁶ All models include a separate control for each partner's estimated ownership of Goldman stock; these variables attempt to capture the effects of a partner's existing inventory of shares on unloading.

TABLE VI. COMPENSATION STRUCTURE AND UNLOADING

	Shares Sold (37,685) (a)	Shares Sold (37,685) (b)	Shares Sold (11,810) (c)	Shares Sold (11,810) (d)
Highest Proportion of Pay in Stock	24,463** (10,789)	24,711** (10,781)	13,770*** (3,390)	13,773*** (3,392)
Section 16 Executive	-36,054** (14,834)	-36,254** (14,822)	-34,869*** (5,832)	-34,874*** (5,833)
Year Fixed Effects?	No	Yes	No	Yes
Observations	307	307	1,823	1,823
Adjusted R ²	0.06	0.06	0.16	0.16

possibility, in unreported analysis I applied a standard test for serial correlation to the models, see Jeffrey M. Wooldridge, *Econometric Analysis of Cross Section and Panel Data* 282–83 (2002); those tests did not indicate the presence of serial correlation. As a further robustness check, in unreported analysis I included first lagged, and then differential, dependent variables as separate controls in models assessing the relationship between disclosure and unloading, see *infra* tbl.VIII. The results were consistent with those described in the Essay.

125. In unreported analysis I constructed an alternative dataset, this time consolidating each line of data on a quarterly rather than annual basis. I then repeated each analysis described below, replacing year fixed effects with quarterly fixed effects where appropriate. The results were consistent with the analysis of the annual datasets described in Tables VI through IX below.

126. This variable is of interest because members of the management committee receive a higher proportion of their pay in stock than do other partners, see *supra* note 36. In addition, because some, but not all, of the members of the management committee are also section 16 executives, the models below can separately estimate the relationship between the proportion of compensation paid in stock and unloading on the one hand and the relationship between the application of section 16 and unloading on the other.

2. *Stock Compensation and Unloading.* — To estimate the relationship between stock-based pay and unloading, I again limit my analysis to the 2005–2009 period and specify a multivariate model in which the total amount of unloading (including both shares sold and options exercised) by the partner is the dependent variable. “Shares Delivered” reflects an estimate of the number of shares given to each partner in stock-based pay. All models include separate controls for partner seniority and the partner’s estimated ownership of Goldman stock.

TABLE VII. STOCK COMPENSATION AND UNLOADING¹²⁷

	Shares Unloaded (18,733) (a)	Shares Unloaded (18,733) (b)
Shares Delivered	0.8*** (0.2)	0.8*** (0.2)
Section 16 Executive	–32,591*** (6,553)	–32,450*** (6,556)
Year Fixed Effects?	No	Yes
Observations	1,823	1,823
Adjusted R ²	0.18	0.18

3. *Unloading and Disclosure.* — To assess the relationship between unloading and disclosure, I include all ten years in the sample period but limit my analysis to the twenty-three partners who were section 16 executives for at least one year during that period. The dependent variable in all three models, as in Table VII, is the total number of shares unloaded by each partner in a particular year. “Year Required to Disclose” reflects a dummy variable indicating whether the partner was a section 16 executive in a particular year. Because certain executives have been subject to additional contractual restrictions on unloading since 2004, all three models include controls for a dummy variable indicating whether the individual partner was subject to these restrictions in a particular year.¹²⁸ All models include controls for estimates of each partner’s overall ownership of Goldman shares. In addition, because Goldman discloses the age of its executives, I include separate controls for age in all models. In the final model (c), I code each partner with a separate identifier and control for partner-specific fixed effects.

127. In these models, the correlation coefficient for options delivered to each partner is positive but statistically insignificant. When these models are applied to a separate dataset aggregated on a quarterly rather than annual basis, see *supra* note 125, the correlation coefficient for shares delivered declines slightly, but the correlation coefficient for options delivered is significantly positive and statistically significant at the 99% confidence level.

128. These restrictions require the executives to retain 75% of the shares they receive in stock-based pay. See *supra* note 35.

TABLE VIII. UNLOADING AND DISCLOSURE

	Shares Unloaded (103,074) (a)	Shares Unloaded (103,074) (b)	Shares Unloaded (103,074) (c)
Year Required to Disclose	-69,748*** (18,498)	-68,511*** (18,450)	-38,649* (20,529)
Year Fixed Effects?	No	Yes	No
Individual Partner Fixed Effects?	No	No	Yes
Observations	175	175	175
Adjusted R ²	0.17	0.18	0.36

4. *Unloading, Disclosure and Leadership.* — Below I consider the possibility that the norms associated with executives' leadership positions, rather than disclosure itself, account for the relationship between disclosure and unloading. Again I include all ten years in the sample period, but now I include any partner who was a section 16 executive or member of the firm's management committee at any time during the sample period. The dependent variable in each model is the number of shares sold by the partner in each year.

As in Table VIII, "Year Required to Disclose" reflects a dummy variable indicating whether the partner is a section 16 executive. Both models include dummy variables reflecting the partners' seniority as well as controls for each partner's overall ownership of Goldman shares.

TABLE IX. UNLOADING, DISCLOSURE, AND LEADERSHIP

	Shares Sold (76,143)	Shares Sold (76,143)
Year Required to Disclose	-46,167*** (13,828)	-45,543*** (13,769)
Year Fixed Effects?	No	Yes
Observations	352	352
Adjusted R ²	0.16	0.17